



# CHAPTER 3

## PLANNING FOR FORESTRY OPERATIONS



### 3 - Planning for Forestry Operations



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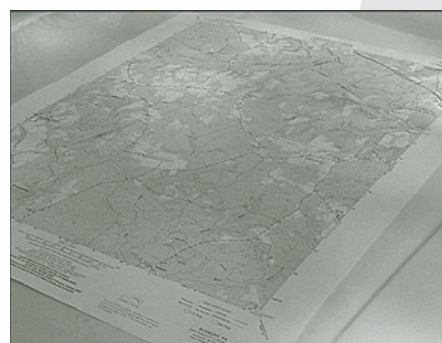
Any forest management activity, regardless of potential impact on water quality, should be thoroughly planned. Whether the activity involves timber harvesting, site preparation and reforestation, chemical treatments, timber stand improvement or fire management, the planning process should consider the objectives of the proposed activity and potential impacts of all actions that disturb the soil surface or impact water quality. Planning should help identify sensitive areas and applicable BMPs to be used during timber sales, forest management



activities, road construction, stream crossings, harvesting, site preparation, reforestation, fire management and silvicultural chemical applications. Planning should also identify terms and conditions of a written contract for any forestry practice. While BMPs do not specifically require written plans, it is generally a sound practice to maintain written records of any forest management activity on the land.

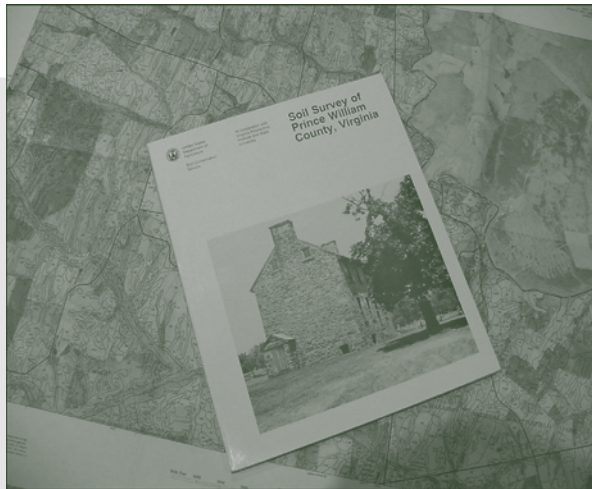
Plans should consider:

1. History of the site, including previous land use;
2. Sensitive areas such as perennial and intermittent streams, lakes, ponds, wetlands, sinkholes, steep slopes, highly-erosive or hydric soil types, active gully systems, etc.;
3. Regulations and/or permitting requirements; and
4. Location, type, timing and logistics of each activity.



Useful resources for planning forestry operations include U.S. Geological Survey (USGS) topographic maps, Natural Resource Conservation Service (NRCS) county soil survey maps with interpretations, aerial photographs and county tax maps. Additional tools include an area stand map and tract boundary survey map that can reveal tract boundaries and sensitive areas. Because no map is 100 percent accurate, they should be used as a reference to identify potentially sensitive areas that must then be verified and plotted during field reconnaissance to minimize impacts before silvicultural operations begin. Most of these maps, along with aerial photographs, are accessible at Department of Forestry area offices. The NRCS maintains soil maps at local field offices where field personnel are available to assist with map and resource information interpretation.

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Water quality protection begins with the ability to recognize watercourses and water bodies. According to the Federal Clean Water Act, “waters of the U.S.” include lakes, rivers, perennial and intermittent streams, wetlands and sloughs, or natural ponds. Identifying stream types (perennial or intermittent) is important in prescribing the level of protection through the implementation of BMPs listed in this manual. USGS topographic maps and NRCS county soil maps can be used as a reference to help identify stream types. Where available, they should be cross-referenced and field verified.

#### Stream Types

*Perennial streams* flow in a well-defined channel throughout most of the year under normal climatic conditions. Some may dry up during drought periods or due to excessive upstream uses. They are usually identified as solid blue lines on USGS topographic maps and as either solid black or black lines separated by one dot on NRCS soil maps. Aquatic organisms are normally present and easily found in these streams.

*Intermittent streams* flow in a well-defined channel during wet seasons of the year but not for the entire year. They generally exhibit signs of water velocity (scouring) sufficient to move soil material, litter and fine debris. They are usually identified as blue lines separated by three dots on USGS topographic maps and as black lines separated by two or more dots on NRCS soil maps. Aquatic organisms often are difficult to find or not present at all in these streams.

*The landowner or manager may be familiar with a stream’s flow characteristics and make the determination of stream type. In some cases there may be uncertainty. In such situations, a qualified professional forester or other resource professional should be consulted.*

#### Other Sensitive Areas

Some water bodies and upland areas have particular characteristics or regulatory requirements that require different management approaches. These include, but are not limited to mountain trout streams, protected river corridors, water supply reservoirs/watersheds, cave entrances, ditches, canals, sloughs, wetlands, braided streams and gullied areas. In such situations, a qualified professional should be consulted. Forest health issues such as fire management, integrated pest management and disease control may also require a qualified professional to prescribe appropriate actions. Forest managers, landowners, foresters, timber buyers, logging contractors, site preparation contractors and reforestation contractors should clearly identify water bodies, sensitive areas and streamside management zones (SMZs) in the field and then

decide which BMPs to apply and when and where to apply them to better design access roads, log decks and stream crossings. They should supervise these operations to ensure that BMPs are followed where necessary so that water quality is not compromised.

### Benefits of Planning

The benefits of a well-written plan and/or written contract include: better communications of expectations between the landowner and forestry professionals; maximum return from the harvest; potential long-term benefits in site productivity; better infrastructure; economic efficiency; minimal environmental impacts; compliance with federal, state and local laws; avoidance of fines or penalties; and enhancement of habitat for wildlife diversity. For information regarding sample contracts and management planning, contact the Virginia Department of Forestry. Planning for the protection of water quality just makes good sense.

### Special Management Areas

*Braided streams* – Braided streams are streams that have multiple channels. Treat each channel individually, depending on whether the stream is perennial or intermittent. These unique and unstable streams require site-specific management planning and recommendations. Check with a qualified professional forester for management assistance.

*Canals and ditches* – Minor drainage to *temporarily* lower the water level on a wetland site during road construction, timber harvesting and site preparation is considered normal and exempt from Section 404 permitting if it does not result in the immediate or gradual conversion of a wetland to an upland or other land use. Minor drainage does not include the construction of a canal, dike or any other structure that continuously drains or significantly alters a wetland or other water body. If the ditches could potentially move sediment or other pollutants into the natural stream system and/or off-site, appropriate water protection techniques and devices should be used. Ditches should not empty directly into streams. New drainage ditches should not be located within the SMZ.

*Gullies* – Many old erosion gullies have healed and are not actively eroding. Care should be taken not to reactivate gully erosion. If the silvicultural activity leads to reactivation of flow, then the gullies may require stabilization.

*Lakes, ponds and other bodies of flowing water* – Follow the BMPs recommended for perennial streams.

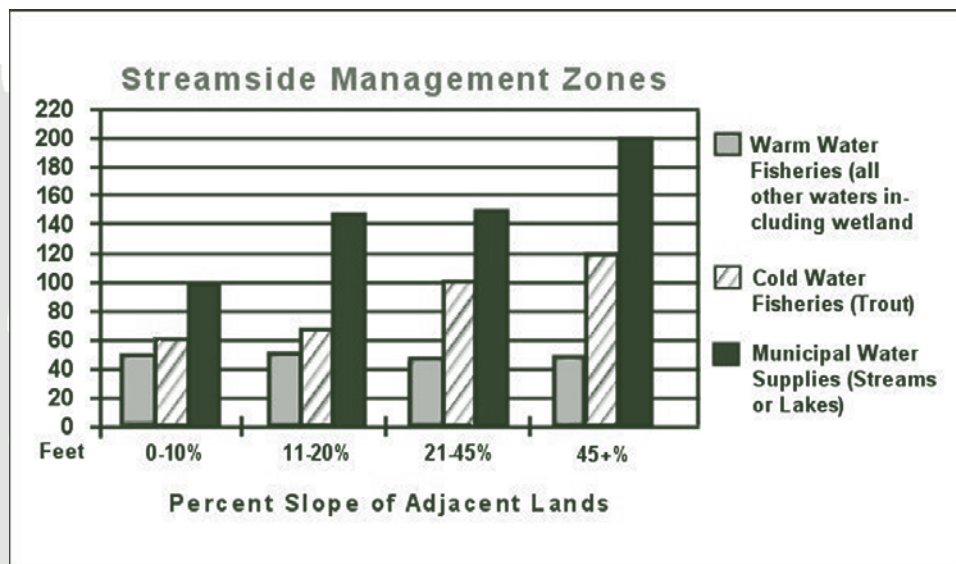
*Seeps and springs* – Check with a local professional forester when seeps and springs are present to determine appropriate SMZ recommendations.

*Sinkhole* – A geologic feature typically found in karst geology, it usually provides a direct connection between land surface and groundwater. Cave entrances where active streams are present should be protected by an SMZ.

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*Slough* – Sometimes referred to as an oxbow, treat as a perennial or intermittent stream if it could potentially move sediment or other pollutants off-site.

*Water supply reservoir/watershed* – Requires wider buffer areas. Please refer to this table for buffer width requirements.



*Wetlands* – For regulatory purposes, wetlands are defined by the presence or absence of specific plant communities, hydric soils and hydrologic conditions. Because of the generally wet soil conditions associated with forested wetlands, these areas are extremely sensitive to forestry activities. For example, bottomland hardwood sites and other swamps differ from upland forest types because their soils are wet most of the year. They are frequently connected directly to a larger aquatic system, often have overbank flow from nearby stream flooding, and may accumulate sediments and nutrients from upstream erosion and runoff.

To properly manage forested wetlands: plan for regeneration; consider the areas beyond the management boundary; and use special harvesting equipment and techniques to protect water quality. Any stream channels should be identified and protected by utilization of the appropriate SMZ.

*For more information on harvesting and site preparation of wetlands, refer to Chapter 9.*

### Endangered Species

The Virginia Department of Game and Inland Fisheries, the Virginia Department of Conservation and Recreation—Division of Natural Heritage, and the U.S. Fish and Wildlife Service have listings of endangered species and their known locations within Virginia. If you suspect the presence of an endangered species on the property where the silvicultural activity is to occur, consult one or more of these agencies for verification and management considerations. A listing of these agencies can be found in Appendix E.



